Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-66 (canceled)

Claim 67 (currently amended): ~~A method for determining if a muscle fibre is intact and validating a test wherein the test is to determine a change in activation state of muscle precursor cells, the method comprising contacting a DNA intercalator with muscle fibers associated with the precursor cells, and determining whether myonuclei DNA is intercalated.~~
A method for determining if a change in activation state of muscle precursor cells occurs as a result of a change in a muscle fiber state from the intact state, the method comprising the steps of:
(a) contacting a DNA intercalator with muscle fibers associated with the precursor cells, and determining whether myonuclear DNA is intercalated; and
(b) determining a change in activation state of the muscle precursor cells;
wherein absence of myonuclear DNA intercalation in step (a) indicates that the fiber is intact and that the change in activation state of muscle precursor cells in step (b) occurs as a result of a change in a muscle fiber state from the intact state.

Claim 68 (currently amended): The method according to claim 67 wherein the change in activation state is a fiber hypercontraction-dependent change, and wherein ~~with the method further comprises contacting a myotoxin with the muscle fibres to determine fiber membrane damage~~ step (b) comprises determining a change in activation state when the muscle fiber is contacted with a myotoxin compared to absence of the myotoxin.

Claim 69 (currently amended): The method according to claim 67 ~~wherein the test~~ which is a diagnostic test.

Claim 70 (currently amended): A method for identifying a compound which effects a change in activation state of skeletal muscle satellite cells, comprising:

a) ~~determining according to the method of claim 67 that fibers associated with the satellite cells are intact~~ contacting a DNA intercalator with a muscle fiber associated with the muscle

satellite cells to determine whether myonuclear DNA is intercalated, wherein absence of myonuclear DNA intercalation indicates that the fiber is intact;

b) determining the activation state of satellite cells in the absence of the compound; and

c) determining the activation state of satellite cells treated with the compound;

wherein the difference between the two activation states identify the compound as a compound which effects a change in activation state of skeletal muscle satellite cells.

Claim 71 (currently amended): A method for identifying a compound which effects a fiber hypercontraction-dependent change in activation state of skeletal muscle satellite cells, comprising:

a) ~~determining according to the method of claim 67 that fibres associated with the satellite cells are intact~~ contacting a DNA intercalator with a muscle fiber associated with the muscle satellite cells to determine whether myonuclear DNA is intercalated, wherein absence of myonuclear DNA intercalation indicates that the fiber is intact;

b) treating an intact fiber containing skeletal muscle satellite cells with a myotoxin and a DNA intercalator to effect fiber hypercontraction;

c) determining the activation state of skeletal muscle satellite cells in the absence of the myotoxin, DNA intercalator and the compound; and

a) determining the activation state of skeletal muscle satellite cells treated with the compound in the absence of the myotoxin and DNA intercalator;

wherein the difference between the two activation states identify the compound as a compound which effects a fiber hypercontraction-dependent change in activation state of skeletal muscle satellite cells.

Claim 72 (original): The method according to claim 67 wherein the DNA intercalator is ethidium bromide or propidium iodide.

Claim 73 (original): The method according to claim 68 wherein the myotoxin is marcaine.

Claim 74 (previously presented): The method according to claim 71 wherein the DNA intercalator is ethidium bromide or propidium iodide.

Claim 75 (previously presented): The method according to claim 71 wherein the myotoxin is marcaine.

Claim 76 (previously presented): The method according to claim 74 wherein the myotoxin is marcaine.

Claim 77 (previously presented): The method according to claim 70 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

Claim 78 (previously presented): The method according to claim 71 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

Claim 79 (previously presented): The method according to claim 72 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

Claim 80 (previously presented): The method according to claim 73 wherein the activation state of satellite cells is determined by determining the level of proliferation of satellite cells.

Claim 81 (previously presented): The method according to claim 70 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

Claim 82 (previously presented): The method according to claim 71 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

Claim 83 (previously presented): The method according to claim 72 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

Claim 84 (previously presented): The method according to claim 73 wherein the activation state of satellite cells is determined by monitoring new DNA synthesis in satellite cell nuclei.

Claim 85 (currently amended): The method according to claim ~~78~~ 81 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

Claim 86 (currently amended): The method according to claim ~~79~~ 82 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

Claim 87 (currently amended): The method according to claim ~~80~~ 83 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

Claim 88 (currently amended): The method according to claim ~~81~~ 84 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of satellite cell nuclei.

Claim 89 (new): The method according to claim 67 wherein the activation state of the muscle precursor cells is determined by determining the level of proliferation of the muscle precursor cells.

Claim 90 (new): The method according to claim 68 wherein the activation state of the muscle precursor cells is determined by determining the level of proliferation of the muscle precursor cells.

Claim 91 (new): The method according to claim 67 wherein the activation state of the muscle precursor cells is determined by monitoring new DNA synthesis in muscle precursor cell nuclei.

Claim 92 (new): The method according to claim 68 wherein the activation state of the muscle precursor cells is determined by monitoring new DNA synthesis in muscle precursor cell nuclei.

Claim 93 (new): The method according to claim 91 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of muscle precursor cell nuclei.

Claim 94 (new): The method according to claim 92 wherein new DNA synthesis is monitored by determining the incorporation of detectably labeled nucleotide analogues into DNA of muscle precursor cell nuclei.